

WHAT IS CLAIMED IS:

1. An applicator head for connection to a robotic device, said applicator head useful for applying a fluid material to a substrate, said applicator head comprising:
 - (a) a body portion having a top surface, a bottom surface, and first and second ends;
 - (b) at least one material delivery system defined by said body portion, said material delivery system comprising an inlet, a fluid delivery cavity in the bottom surface of said body portion, and two or more passageways connecting said inlet to said fluid delivery cavity; and
 - (c) a nozzle plate attached to the bottom surface of said body portion, said nozzle plate provided with a plurality of openings communicating with said fluid delivery cavity.
2. An applicator head according to claim 1 wherein the nozzle plate is removably attached to the bottom surface of the body portion.
3. An applicator head according to claim 2 wherein there are at least two material delivery systems defined by the body portion.
4. An applicator head according to claim 3 wherein the plurality of openings in the nozzle plate are arranged in a line.
5. An applicator head according to claim 4 wherein two side-by-side material delivery systems are defined by the body portion and there are fourteen openings provided in the nozzle plate, seven of the openings communicating with the fluid delivery cavity in each of the two material delivery systems.
6. An applicator head according to claim 3 wherein the plurality of openings in the nozzle plate are arranged in a plurality of rows, wherein the openings in a row are off-set from the openings in an adjacent row.
7. An applicator head according to claim 6 wherein two side-by-side material delivery systems are defined by the body portion and there are twenty-two openings provided in the

nozzle plate, eleven of the openings communicating with the fluid delivery cavity in each of the two material delivery systems.

8. An applicator head according to claim 1 further comprising a nozzle inserted in each of the plurality of openings in the nozzle plate.

9. An applicator head according to claim 8 wherein the nozzles are threaded into the openings in the nozzle plate.

10. An applicator head according to claim 9 wherein each of the nozzles is adapted to apply a bead of a fluid material to a substrate, and the beads are spaced less than about 2 mm apart.

11. An applicator head according to claim 10 wherein the nozzles apply beads that have a width of from about 1 to about 12 mm and a thickness of from about 1 to about 5 mm.

12. An applicator head according to claim 8 wherein a wear resistant insert is provided within each of the nozzles.

13. An applicator head according to claim 12 wherein the wear resistant inserts are formed from tungsten carbide.

14. A sound-damping composition comprising:

- (a) n-butyl acrylate-acrylonitrile-styrene copolymer in an effective amount for sound-damping response;
- (b) at least about 0.5% by weight of a low-density glass bead filler;
- (c) at least one additional filler; and
- (d) at least one rheological modifier in an effective amount for controlling the sag and slide resistance of the composition;

wherein said sound-damping composition has a density of from about 1 to about 2 g/cc.

15. A sound-damping composition according to Claim 14 further comprising at least one glycidyl methacrylate functional multipolymer acrylic material having a glass transition temperature of from about 0°C to about 60°C.

16. A sound-damping composition according to Claim 14 wherein the composition has a density of from about 1.1 to about 1.6 g/cc.

17. A sound-damping composition according to Claim 16 wherein the composition has a density of from about 1.2 to about 1.4 g/cc.

18. A sound-damping composition according to Claim 14 wherein the additional filler is selected from the group consisting of dolomitic limestone, limestone, calcium carbonate, plastic microspheres, and mica, and mixtures thereof.

19. A sound-damping composition according to Claim 18 comprising from about 30% to about 75% by weight of the additional filler.

20. A sound-damping composition according to Claim 19 comprising from about 1% to 5% by weight of the glass bead filler.

21. A sound-damping composition according to Claim 14 wherein the composition is prepared by forming an aqueous mixture of components (a) - (d), extruding the mixture onto a substrate, and then baking the mixture to remove water content in a controlled manner.

22. A sound-damping composition according to Claim 14 comprising, by weight:

- (a) from about 13% to about 25% n-butyl acrylate-acrylonitrile-styrene copolymer;
- (b) from about 1% to about 5% of a low-density glass bead filler;
- (c) from about 40% to about 65% of additional filler selected from the group consisting of dolomitic limestone, limestone, calcium carbonate, plastic microspheres, and mica, and mixtures thereof;
- (d) less than about 5% of rheological modifiers;
- (e) less than about 10% of other additives; and
- (f) water.

23. A composition that has increased sound-damping efficacy after being baked for at least 10 minutes at a temperature of at least about 107°C versus a pre-baked composition, said

composition comprising a polymeric system, at least one low-density glass bead filler, at least one additional filler, and at least one rheological modifier, and wherein said composition has a density of from about 1 to about 2 g/cc.

24. A composition according to Claim 23 having a density of from about 1.2 to about 1.4 g/cc.

25. A method for applying a sound-damping composition to a substrate, said sound-damping composition comprising:

- (a) n-butyl acrylate-acrylonitrile-styrene copolymer in an effective amount for sound-damping response;
- (b) at least about 0.5% by weight of a low-density glass bead filler;
- (c) at least one additional filler;
- (d) at least one rheological modifier in an effective amount for controlling the sag and slide resistance of the composition; and
- (e) water;

wherein said sound-damping composition has a density of from about 1 to about 2 g/cc; said method comprising extruding the composition onto a substrate; and baking it to exhaust water content in a controlled manner.

26. A method according to Claim 25 wherein the composition is baked at a temperature of at least about 107°C.

27. A method according to Claim 25 wherein the composition is extruded in a bead having a width of from about 1 mm to about 12 mm.

28. A method according to Claim 25 wherein the composition is extruded in a bead having a thickness of from about 1 mm to about 5 mm.

29. A method according to Claim 25 wherein the composition is extruded in beads spaced less than about 2 mm apart.

30. A method according to Claim 25 wherein the composition is extruded in beads having a width of from about 1 mm to about 12 mm and a thickness of from about 1 mm to about 5 mm, with a spacing of less than about 2 mm between the beads.

31. A method according to Claim 30 wherein the composition is extruded in beads having a width of from about 5 to about 8 mm and a thickness of from about 2 to about 3 mm.

32. A method according to Claim 25 wherein the composition is baked for from about 15 to about 30 minutes at a temperature between about 124°C and about 191°C.

33. A method according to Claim 30 wherein the composition is baked from about 15 to about 30 minutes at a temperature between about 124°C and 191°C.

34. A method of increasing the sound-damping efficacy of an aqueous polymeric composition comprising the steps of:

- (a) extruding the composition onto a substrate; and
- (b) baking the extruded composition for at least about 10 minutes at a temperature of at least about 107°C;

wherein the sound-damping efficacy of the composition after baking is greater than before baking.

35. A method according to Claim 34 wherein the sound-damping composition has a density of from about 1 to about 2 g/cc.

36. A method according to Claim 35 wherein the extruded composition on the substrate is in the form of beads having a width of from about 1 mm to about 12 mm and a thickness of from about 1 mm to about 5mm, with a spacing of less than about 2 mm between the beads.

37. A method of applying an aqueous polymeric material intended to be dried by an oven, said method comprising extruding the aqueous polymeric material onto a substrate in beads having a width of from about 1 mm to about 12 mm and a thickness of from about 1 mm to about 5 mm, with a spacing of less than about 2 mm between the beads.

38. The method according to Claim 37 wherein the material is applied to effectuate sound-damping and the substrate is an automobile component.

39. The method according to Claim 37 wherein the material is applied to effectuate sound-damping and the substrate is a cell phone component.

40. The method according to Claim 37 wherein the material is applied to effectuate sound-damping in a sink.

41. The method according to Claim 37 wherein the material is applied to effectuate sound-damping and the substrate is an appliance selected from the group consisting of dishwashers, dryers, washing machines, blenders, food processors, mixers, fans, air conditioners, snowmobiles, lawnmowers, and convection ovens.

42. The method according to Claim 37 wherein the material is applied to effectuate sound-damping and has a density of from about 1 to about 2 g/cc.

43. The method according to Claim 42 wherein the material is a sound-damping composition comprising an n-butyl acrylate-acrylonitrile-styrene copolymer in an effective amount for sound-damping response; at least one low-density glass bead filler; at least one additional filler; and at least one rheological modifier in an effective amount for controlling the sag and slide resistance of the material.

44. The method according to Claim 37 further comprising the step of baking the extruded material for at least about 10 minutes at a temperature of at least about 107°C.

45. The method according to Claim 44 wherein the material is a sound-damping composition comprising an n-butyl acrylate-acrylonitrile-styrene copolymer in an effective amount for sound-damping response; at least one low-density glass bead filler; at least one additional filler; and at least one rheological modifier in an effective amount for controlling the sag and slide resistance of the material.

46. The method according to Claim 45 wherein the sound-damping composition has a density of from about 1 to about 2 g/cc.